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CROP DEVELOPMENT CENTRE CELEBRATES BANNER YEAR

The Crop Development Centre (CDC) at the University of Saskatchewan is celebrating another successful year, having developed 29 new varieties recommended for registration. They include yellow and green peas, chickpeas, flax, durum, malt barley, feed barley, lentils and dry beans.

"We are the ones who do the original research into what would make a good variety, and take it through the early and advanced generations," said CDC Managing Director Dorothy Murrell.

The organization has dedicated much of its work to breeding pulses, flax and fruit such as apples and saskatoons.

Many of the crops grown in Saskatchewan were initially developed at the CDC, including Harrington, CDC Kendall and CDC Copeland malting barley, which have taken a strong foothold in the marketplace. Others include milling oat CDC Dancer, CDC Bethune flax, and approximately 70 per cent of the winter wheat grown in Western Canada.

"Virtually all the lentil varieties we grow on the Prairies have come out of the Crop Development Centre," said Murrell. In addition, CDC pea varieties are growing in market share.

The CDC's goal in its work with chickpeas is to develop a variety that has improved disease resistance and can handle a shorter growing season, further adapting it for the realities of the Canadian prairies.

Indeed, Murrell says genetic optimization is the objective of breeding any new variety. The CDC's goal is to develop varieties suited to the prairie climate that outperform the standard check varieties. Of utmost importance, therefore, given Saskatchewan's shorter growing season, is the length of time to maturity. Characteristics like height help determine the ease of harvest. Other critical factors that can be influenced include germination qualities, seed size, quality parameters, plumpness of the kernel, seed weight and amount of chaff.

Quality factors, using wheat as an example, include gluten, protein and starch. "We try to optimize the agronomic fit for the farmer, and the quality fit for the end user," Murrell said.

The process of bringing a new variety to the marketplace is lengthy, taking as much as eight years. Moreover, it involves thorough research and testing.

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"At a point in the breeders' process, they provide seed of their new lines to a co-operative trialling process which is run by a crop co-ordinator, and replicated trials are set out across Western Canada. Those trials are then reviewed by a third party," explained Murrell.

"Through the third-party trialling process, the new lines are checked for their fit, yield, agronomic characteristics and quality of grain. A package of data is put together, which is taken to a recommending committee. The recommending committee looks at the data and makes a decision based on whether the variety, in their view, is equal to or better than the current check varieties."

Once the recommendation is in place, the breeder can submit an application to the Canadian Food Inspection Agency for registration of the variety. Once registered, it is ready for commercialization.

Private companies play an important role in commercialization. In certain cases, the CDC has research agreements with seed companies and farm organizations to fund the development of new varieties. In other instances, the CDC issues a public tender for seed companies to come up with a marketing proposal.

The researchers issue breeder's seed, the purest form, to the marketing company, which then takes the variety through generations of multiplication until reaching the point of certified seed. The certified seed becomes the seed of commerce and is sold to growers.

Since the CDC was formed in 1971, it has contributed more than 200 registered varieties. This winter alone, 29 varieties were recommended for registration.

The CDC employs a staff of seven breeders, two pathologists and up to 100 technical staff. The centre is operated by the College of Agriculture and Bioresources at the University of Saskatchewan. In 2007/08, Saskatchewan Agriculture contributed approximately $3.5 million to the CDC through an operational grant, research contracts and the Strategic Research Program.

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